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| 10/783,283 | 02/20/2004 | Shotaro Ohno | 16869W-105300US | 7602 |

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| EXAMINER |
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LOHN, JOSHUA A

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| ART UNIT | PAPER NUMBER |
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2114

DATE MAILED: 06/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/783,283 | Applicant(s) OHNO ET AL. | |
| | Examiner Joshua A. Lohn | Art Unit 2114 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 5/15/06 have been fully considered but they are not persuasive.

With respect to applicant's arguments regarding the 102(b) anticipation by Reuter et al., the examiner respectfully disagrees. With regard to claim 1, applicant argues that Reuter fails to disclose "acquiring in advance from the host computer storage configuration information... and generating change information for changing said storage configuration information and posting it to said host computer." However, the examiner feels that these limitations are clearly taught in Reuter, where the configuration information is the write fault information, which is acquired in advance, the modified, and then the modified, changed information is posted (Reuter, ¶50-¶54). The additional argued limitations involving the primary volume location and copy pair information are not included in the claims, and the relating arguments are rendered moot. Similar arguments, as set forth relating to claims 8 and 9 are disagreed with for the same reasons mentioned above. The argument that the invention relates to synchronization is also not directed to claimed material, and as currently claimed, a broad, reasonable interpretation of the claims would not be limited to merely synchronization applications, and the operational methods of Reuter are sufficient to meet the requirements of the currently claimed limitations.

With respect to applicant's arguments regarding the 102(e) anticipation by Wang et al., the examiner respectfully disagrees. With regard to claim 1, applicant argues that Wang fails to disclose "a management computer that comprises means for acquiring in advance from the host computer storage configuration information that the host computer has." However, the examiner

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feels this is clearly disclosed in the acquiring of configuration information changes by the controller, as disclosed by Wang, col. 7, lines 3-6. The additional argued limitations relating to the primary volume location, synchronization, and the copy-pair information are not included in the claims, and the relating arguments are rendered moot. A broad reasonable interpretation of claims 1 and 13 would be satisfied by the disclosure of the system switching of Wang, which is detailed below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Reuter et al., United States Patent Application Publication number 2002/0019923, published February 14, 2002.

As per claim 1, Reuter discloses a storage system comprising at least one host computer, at least one storage device for providing a memory device to said host computer, and a management computer for managing said storage device (Reuter, figures 1A and 1B), wherein said management computer comprises: means for acquiring in advance from said host computer storage configuration information that said host computer has (Reuter, ¶50, where write fault information is the configuration information of the host computer, which uses the related mapping tables); and change notification means for generating change information for changing

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said storage configuration information that was acquired in advance and posting it to said host computer (Reuter, ¶¶51-¶54, where mapping changes are the change notifications that are generated and posted); and said host computer comprises means for instructing a change of configuration to said storage device based on said change information posted from said management computer (¶52 and ¶54, where the set_entry commands invoke the configuration changes).

As per claim 2, Reuter further discloses that the change information comprises first change information for preparing configuration changes of said storage device (Reuter, ¶¶51-¶52, where updates to all but the table that generated the fault prepare the entire system for the coming configuration change to the faulty table) and second change information for executing the configuration changes prepared by said first change information (Reuter, ¶¶53-54, where the changes to the faulty configuration of a table is executed); said change notification means comprises: first notification means for posting said first change information to said host computer (Reuter, ¶52, where the set_entry is the notification); and second notification means for posting said second change information to said host computer (Reuter, ¶54, where the set_entry is the notification); said host computer comprises preparation means for preparing the configuration change to said storage device by generating configuration setting information based on said first change information (Reuter, ¶¶52 and ¶54, where the hosts execute the posted messages to make changes); and execution instruction means for instructing the configuration change to said storage device based on said second change information and said generated configuration setting information (Reuter, ¶¶53 and ¶54, where all the mapping changes correlate to executed instructions changing the configuration of the storage information).

As per claim 3, Reuter further discloses that the host computer is provided in a plurality (Reuter, figures 1A and 1B); said first notification means posts said first change information to each said host computer (Reuter, ¶¶51-¶52); said second notification means posts said second change information to a prescribed host computer among said host computers (Reuter, ¶¶53-¶54, where the prescribed host configuration change is the faulty mapping that is targeted by the second mapping changes); each said host computer comprises preparation means for preparing the configuration change to said storage device by generating configuration setting information based on said first change information (Reuter, ¶52); and said prescribed host computer comprises execution instruction means for instructing the configuration change to said storage device based on said second change information and said generated configuration setting information (Reuter, ¶54).

As per claim 4, Reuter further discloses that the management computer comprises setting means for setting all or some of the parameters for generating said change information based on said storage configuration information that was acquired in advance (Reuter, ¶¶50-¶54, where the changes to mapping parameters are based upon the configuration information indicating a faulty mapping action).

As per claim 5, Reuter further discloses that the storage configuration relating to all or some of said parameters set with said setting means is protected (Reuter, ¶52, where the blocking of new requests protects the tables from having the parameters altered).

As per claim 6, Reuter further discloses that the management computer acquires the newest storage configuration information from said storage device when the configuration of said storage device is changed based on said change information (Reuter, ¶¶53-¶54, where the

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managing controller controls all the configuration changes and acquires all information relating to the mapping of configurations changes acting on the storage devices).

As per claim 7, Reuter further discloses that the management computer posts the configuration change of said storage device to another host computer which is not a notification object of said change information but is associated with the configuration change of said storage device, the associated another host computer using said storage device to be changed (Reuter, ¶52 and ¶54, where all the hosts receive the configuration changes).

As per claim 8, this claim is merely a method of operating the apparatus disclosed in claim 1. As such, the rejection applied to claim 1 above correlates directly to this method. Claim 8 is therefor rejected under the same grounds as claim 1 mentioned above.

As per claim 9, this claim is merely a software representation of the apparatus of claim 1. Reuter clearly discloses the use of code in the disclosure that functions and return values are used to implement the apparatus used in the previous rejections (Reuter, ¶20). Claim 9 is therefor rejected under the same grounds as claim 1 mentioned above.

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang et al., United States Patent number 6,898,727, filed March 22, 2000.

As per claim 1, Wang discloses a storage system comprising at least one host computer, at least one storage device for providing a memory device to said host computer, and a management computer for managing said storage device (Wang, figure 3), wherein said management computer comprises: means for acquiring in advance from said host computer storage configuration information that said host computer has (Wang, col. 7, lines 3-6, where the detecting of changes in the operational status is the detected configuration information sensed by the management computer, in the form of a controller); and change notification means for generating change information for changing said storage configuration information that was acquired in advance and posting it to said host computer (Wang, col. 7, lines 15-17, where the configuration changes are involved in the changing of the operational state of the secondary and primary hosts); and said host computer comprises means for instructing a change of configuration to said storage device based on said change information posted from said management computer (Wang, col. 16, line 35 through col. 17, line 5, where a secondary host is brought up in response to the configuration change information and the primary host is instructed to replicate with same information).

As per claim 13, Wang further discloses that the storage system includes a plurality of host systems (Wang, figure 3); said storage configuration information includes volume information provided by said storage device (Wang, col. 7, lines 3-18 and col. 16, lines 40-41, where it is inherent in the ability to know which system is to be brought up and what storage is connected to each host that the volume information is provided in the configuration information); said management computer further comprises selection means for respectively selecting pairs of primary volumes and secondary volumes based on the volume information included in said storage configuration; said change notification means is used for instructing the generation of configuration setting information following said selected pairs of primary volumes and secondary volumes to a selected host computer having the selected volume as said primary volume and a selected host computer having the selected volume as a secondary volume (Wang, col. 7, lines 3-18, where the controller selects the primary and secondary hosts and storage and can generate the configuration changes to change the operating status of each), and instructing a volume copy to any of said selected host computer; and at least each of said selected host computers comprises means for generating configuration setting information following said selected pairs of primary volumes and secondary volumes, and means for instructing the volume copy to said storage device based on instruction (Wang, col. 16, line 66 through col. 17, line 12, where the configuration commands can select portions of the content and instruct a volume copy based upon these selected contents).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua A. Lohn whose telephone number is (571) 272-3661. The examiner can normally be reached on M-F 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571) 272-3644. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



SCOTT BADERMAN
SUPERVISORY PATENT EXAMINER

JAL